PRELIMINARY AND SHORT REPORT

THE EFFECT OF GAMMA GLOBULIN IN PUSTULAR ACNE*

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One of us (LWS) had occasion to treat a young white man with gamma globulin for prophylaxis after exposure to infectious hepatitis. He was given two injections, 10 cc. each, of human Poliomyelitis Immune Globulin, one week apart. It was observed that shortly after the second injection, his severe pustular and indurated acne improved considerably. This observation led to the present study, of which this is a preliminary report.

This study of the therapeutic effect of gamma globulin in pustular acne is coupled with a study of the serum protein and C-reactive protein levels before and after treatment.

Method: Four patients in their late teens, otherwise healthy, but with severe pustular and cystic acne that had been resistant to conventional methods of treatment were selected for the study. All therapy for acne was discontinued. On two successive weeks 10 cc. of Poliomyelitis Immune Globulin containing 165 ± 15 mg per cc of the globulin fraction of pooled normal human plasma, were injected intramuscularly. At the time of the first injection and one week after the second, fasting blood specimens were drawn for C-reactive protein, serum albumin, serum globulin, and gamma globulin determinations. The patients were observed at two week intervals for observation of the clinical response.

Results:

	Week	Polio Immune Globulin Injected	Gm % Serum Albumin	Gm % Serum Globulin	Gm % Serum Gamma Globulin	Serum C-reactive Protein
Patient 1	1	10 cc	5.3	2.5	1.4	Negative
	2	10 cc	—	—	—	—
	3	—	4.9	2.2	1.41	Trace
Patient 2	1	10 cc	4.7	2.4	1.23	Negative
	2	10 cc	—	—	—	—
	3	—	5.1	2.2	1.23	Trace
Patient 3	1	10 cc	5.2	1.8	.81	Faint Trace
	2	10 cc	—	—	—	—
	3	—	5.2	1.8	.81	Faint Trace
Patient 4	1	10 cc	4.9	2.8	1.53	2+
	2	10 cc	—	—	—	—
	3	—	5.1	2.6	1.35	Negative

Clinical Response: Patient 1: New lesions ceased appearing immediately after the first injection. By the third week most of the cystic and pustular lesions had dried up, and no new ones had appeared. Comedones were not decreased in number. The patient maintained his improvement through the fifth week when the cystic and pustular lesions began to recur.

Patient 2: New lesions continued to develop throughout the period of treatment and the one month follow up.

Patient 3: There was no observable effect of treatment.

Patient 4: The first improvement was seen in the second week and by the third, all cystic and pustular lesions were dry. The improvement lasted for two weeks after which the lesions began to return.

Discussion: The expected rise in gamma globulin that accompanies chronic infections was not seen in any of the four cases. (The normal values for gamma globulin by the Ammonium Sulfate precipitation method employed are 1 to 1.4 Gm%). One patient (3) showed a moderate deficiency. The C-reactive protein was positive or showed a trace in three of the four patients. Further investigation will be necessary to determine whether a significant number of patients with severe pustular acne show a systemic response as indicated by elevation of the serum gamma globulin and appearance of the C-reactive protein. Previous experience indicates that other indications of systemic response, temperature, sedimentation rate, and leukocyte count, are normal in patients with pustular acne.

The mechanism of the clinical improvement in the two patients that improved is unknown. It is unlikely that passive transfer of antistaphylococcol immune antibodies is a factor because of the well known failure to develop circulating antibody titer or clinical immunity to this organism. Further work will be done to determine dosage schedules to obtain and maintain improvement, and to determine whether the gamma globulin directly and/or indirectly aids in local skin resistance.

Conclusions: No valid conclusions can be drawn

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from the small number of patients studied. However, the results were interesting enough to warrant further study.

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